Let $\vec{a} = \begin{pmatrix} 6 \\ -2 \\ 1 \end{pmatrix}$ and $\vec{b} = \begin{pmatrix} -5 \\ 3 \\ 2 \end{pmatrix}$.

5. Find the angle between $\vec{a}$ & $\vec{b}$.

6. Find the exact magnitude of:

a) $2\vec{b} + \vec{a}$ b) $\vec{a} - \vec{b}$

7. Find the unit vector in the direction of $\vec{b}$

8. Find a vector of length 4 in the same direction as $\vec{a}$.

9. Find the angle that $\vec{b}$ makes with the positive y-axis. (Answer nearest tenth)

10. Find a 3rd vector perpendicular to both $\vec{a}$ & $\vec{b}$

11. Simplify: $3\vec{OA} + 6\vec{BC} + 2\vec{AO} + \vec{AB} + 5\vec{OB} + \vec{OC}$